REMARKS

Claim 1 is amended to more particularly point out that the adaptive cruise control system is capable of controlling a vehicle speed, and that the recited method includes the steps of measuring a lateral acceleration from a lateral acceleration sensor (216), detecting a change in a vehicle lateral acceleration based on a change in the measured lateral acceleration, and, if a vehicle is in a turn, reducing the vehicle speed according to the determination that the vehicle is in the turn and the detected change in the vehicle lateral acceleration, see Fig. 2 and paragraph 0013 and 0024.

Claim 3, dependent upon claim 1, is amended to be consistent with claim 1 following the amendments thereto.

Claim 11 is amended to more particularly point out that the method includes measuring a lateral acceleration from a lateral acceleration sensor (216), detecting a change in a vehicle lateral acceleration based on a change in the measured lateral acceleration, determining the vehicle path based on the detected change in the vehicle lateral acceleration, monitoring for objects, detecting a location of an object, determining whether the location of an object is within the vehicle path, and when the vehicle is determined to be in the turn, reducing the vehicle speed according to the determination that the vehicle is in the turn and the location of the object, see Figs. 2 and 4 and paragraph 0026.

Claims 1, 2, 3, 7, 11, 12, and 15 are amended to clarify references to the vehicle speed, vehicle yaw rate, and vehicle lateral acceleration. The dependency of claim 17 is corrected following the cancellation of an intervening claim.

Claim Rejections based on Sielagoski et al. in view of Kawazoe

Claims 1-3 and 6-7 were rejected under 35 U.S.C. 103(a) as being obvious over United States Patent Number 6,317,679 to Sielagoski et al. in view of United States Patent Number 5,295,493 to Kawazoe.

Sielagoski et al. describes an adaptive vehicle speed control system that measures yaw rate for reducing the speed of a vehicle making a turn. In contrast, Applicants' Adaptive Cruise Control (ACC) system measures a lateral acceleration sensor, detects a change in the measured lateral acceleration, and uses the change in measured lateral acceleration for reducing the speed of a vehicle making a turn. As acknowledged in the Office Action, Sielagoski et al. do not explicitly disclose determining when the vehicle is in a turn based on the detected change in the vehicle lateral acceleration. The Office Action points to Figs. 3 and 4, and related text in Sielagoski et al. as teaching the relationship between the yaw rate and the lateral acceleration of a vehicle. However, the relationships shown in the figures are simply graphical representations of the mathematical formula shown in column 6, and do not teach utilizing change in vehicle lateral acceleration. By way of example of a difference, the relationships rely on the vehicle not experiencing any skidding or loss of traction. If skidding or a loss of traction occurs, the depicted relationship in Sielagoski et al. between yaw rate and lateral acceleration of a vehicle breaks down, and the graphs in the figures are not usable. Applicants recognize this problem and provide a more reliable determination that the vehicle is in a turn by measuring a lateral

acceleration and detecting a change in lateral acceleration. Further, Applicants use the change in measured lateral acceleration for controlling the speed of a vehicle in the turn instead, see paragraph 0008, thereby avoiding the problems associated with the use of yaw rate, as in Sielagoski et al. Therefore, Sielagoski et al. does not teach or suggest Applicants' method.

The Office Action relies on Kawazoe to make up for the deficiencies of Sielagoski et al. Kawazoe describes a vehicle body roll control system that adjusts the damping characteristics of the vehicle based on sequence of left-right steering wheel inputs to reduce body roll and improve the cornering capability of the vehicle. Nothing is Kawazoe contemplates an adaptive cruise control system, or controlling vehicle speed during a turn. The Office Action points to column 9, lines 45-50 where the reference contemplates using 'change rate of lateral acceleration' as an input to determine that the vehicle is in the 'turning transition state', where the 'change rate of lateral acceleration' is an alternative to using 'steering wheel angular velocity' as the input. The term 'turning transition state' is defined by Kawazoe as when a sequence of steering operations are detected, where the sequence is left and right steering operations, see column 1, lines 41-58 and Fig 9. The sequence of steering operations sought to be detected by Kawazoe cause a sequence of inversions of the lateral acceleration, see column 9, lines 51-52. Clearly, determining if a vehicle is in a "turn transition state" where an inversion of the lateral acceleration is caused by the vehicle transitioning from a left turn to a right turn, or the reverse, is not the same thing as "determining when the vehicle is in a turn based on the detected change in the vehicle lateral acceleration" where the lateral acceleration measured by the cruise control system is not expected to invert as the vehicle executes a turn. Therefore, Kawazoe does not teach or suggest Applicants' method of detecting a change in vehicle lateral acceleration for reducing the speed of a vehicle making a turn.

Thus, neither Sielagoski et al. or Kawazoe teach measuring lateral acceleration and using the change in the measured acceleration to control vehicle speed during a turn. Without this feature, even when combined, the references do not point to Applicants' method.

Claim 1 is directed to Applicants' method that includes measuring a lateral acceleration and detecting a change in a vehicle lateral acceleration. Claim 1 is further directed to determining when the vehicle is in a turn based on the detected change in the vehicle lateral acceleration, and if a vehicle is in a turn, reducing the vehicle speed according to the determination that the vehicle is in the turn and the detected change in the vehicle lateral acceleration. Sielagoski et al. measures yaw rate and uses yaw rate to control speed in a turn. Kawazoe looks for inversions of lateral acceleration for control suspension damping, but does not contemplate speed control in a turn. Thus, even when combined, the references do not teach or suggest Applicants' method in claim 1.

Claims 2-3 and 6-7 are dependent on claim 1 and so are not taught or suggested by Sielagoski et al. or Kawazoe or the combination of the references.

Therefore, Applicants respectfully request that the rejection based on Sielagoski et al. in view of Kawazoe be reconsidered and withdrawn, and that the claim be allowed.

Claim Rejections based on Sielagoski et al. in view of Kawazoe in further view of Butsuen et al.

Claims 11-15 and 17-19 were rejected under 35 U.S.C. 103(a) as being obvious over United States Patent Number 6,317,679 to Sielagoski et al. in view of United States Patent Number 6,295,493 to Kawazoe in further view of United States Patent Number 5,467,283 to Butsuen et al.

For the reasons given above with respect to claim 1, neither Sielagoski et al. nor Kawazoe teach or suggest measuring lateral acceleration for determining when a vehicle is in a turn and reducing the speed, as recited in Applicants' claim 11. Thus, neither Sielagoski et al. nor Kawazoe teach or suggest Applicants' method in claim 11 or in the claims 12-15 and 17-19, dependent thereon.

Butsuen el al. shows an obstacle sensing apparatus for determining if an obstacle is within or outside of a vehicle's path of travel. The system includes a yaw rate sensor, but nowhere contemplates a lateral acceleration sensor that directly measures lateral acceleration. Moreover, Butsuen et al. does not contemplate determining when a vehicle is in a turn based on a change in lateral acceleration or reducing the speed of a vehicle making a turn. Thus, even when combined, the references do not teach or suggest Applicants' method in claim 11, or in the claims dependent thereon.

Therefore, Applicants respectfully request that the rejection based on Sielagoski et al. in view of Kawazoe in further view of Butsuen et al. be reconsidered and withdrawn, and that the claims be allowed.

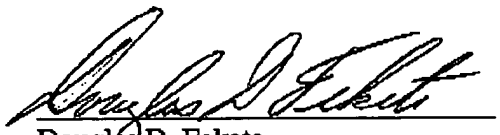
Conclusion

Therefore, it is respectfully requested that all rejections be withdrawn and that the claims be considered in the present application.

If it would further prosecution of the application, the Examiner is urged to contact the undersigned at the phone number provided.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 50-0831.

Respectfully submitted,



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